

REMARKS

This Substitute Preliminary Amendment is filed with a Request for Continued Examination and is intended as a full and complete response to the Office Action dated October 25, 2007, having a shortened statutory period for response set to expire on February 25, 2008 with one month extension. Please enter this Substitute Preliminary Amendment in lieu of the Preliminary Amendment filed January 24, 2008 and reconsider the claims pending in the applications for reasons discussed below. Please reconsider the claims pending in the application for reasons discussed below.

Claims 30-31 and 33-58 remain pending in the application and are shown above. Claims 30, 31, 37, 39-45 and 48-58 stand rejected and claims 33-36, 38, 46 and 47 stand withdrawn by the Examiner.

Claims 30, 42, 50, and 55 have been amended to clarify the claimed subject matter. Basis for the amendment may be found in page 1 lines 20-28 (paragraph [0035] of the publication), page 9 lines 9-15 (paragraph [0044] of the publication), and page 10 lines 1-11 (paragraph [0048] of the publication). Applicant submits that no new matter has been introduced in this amendment.

Reconsideration of the rejected and withdrawn claims is requested for reasons presented below.

Examiner's Response to Argument

The Examiner asserts that the term "drive circuit" reads as an element comprising an input terminal and output terminals and *Jenkins*' (U.S. Patent No. 6,437,596 to *Jenkins et al.*) data line select/hold circuit 319 teaches a drive circuit.

As discussed in a Response filed on December 19, 2007, Applicant respectfully submits that Examiner's assertion of the definition of "drive circuit" is not supported by the reference, *Jenkins*, cited by the Examiner and is not in agreement with the understanding of a person skilled in the art.

Additionally, to clarify the claimed subject matter, Applicant has amended independent claims 30, 42, 50, and 55 defining a drive circuit configured for receiving

external signals and for providing modified signals for a matrix of picture elements during normal operation and during test mode.

The Examiner also asserts that even though *Jenkins* and other references are silent in teaching "the arrangement of test contact area is larger than the arrangement of operational contact area" as set forth in the pending claims, it is obvious for the purpose of reducing the cost of the inspection device.

Applicant respectfully submits that although *Jenkins* refers to a need for a test system with minimal cost, *Jenkins* does not result at the claimed subject matter. Particularly, a simply increase in pad size is not practical because space on a substrate is restricted. Embodiments of the present invention enable an increase of pad size by separating the test pads, which has a smaller number, from operational pads, which has a large number. Since none of the references, including *Jenkins*, U.S. Patent No. 6,636,288 to *Kim et al.*, U.S. Patent No. 5,432,461 to *Henley et al.*, and U.S. Patent No. 6,486,927 to *Kim*, teaches or suggests separating the test pads from the operational pads, the Examiner's assertion that having different sizes of contact areas is obvious is only hindsight with the knowledge of the present invention.

Claim Rejections – 35 U.S.C. § 103

Claims 42-45 and 56 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Jenkins*. Applicant respectfully traverses the rejection.

Jenkins discloses a test apparatus configured to provide a flexible interface between a testing system and a display array being tested so that the testing system can be used to test various display arrays (Abstract). *Jenkins* further discloses that the test apparatus includes gate lines 16, data lines 18, probe pads 21, 23 and select logic 17, 19. (Figure 1(A), column 2 line 37 – column 3 line 45). *Jenkins* also discloses that the test apparatus is formed in the same substrate 10 with the display array 12 and the test apparatus is to be broke off the substrate 10 from the display array 12 which is further integrated for normal

operation (column 5 lines 29-38). However, *Jenkins* does not teach or suggest claimed subject matter.

Regarding claim 42, *Jenkins* does not teach or suggest an arrangement of a test contact areas connected to a drive circuit, wherein the drive circuit is provide with signals via an arrangement of operational contact areas during normal operation, and the drive circuit is configured for receiving external signals and for providing modified signals for a matrix of picture elements during normal operation and during test mode.

Therefore, *Jenkins* does not teach or suggest an arrangement of test contact areas for an optoelectronic device comprising a matrix of picture elements comprising at least one pad, at least one connection of the at least one pad with a drive circuit directly or via another component, wherein the drive circuit is provided with signals via an arrangement of operational contact areas during normal operation, the drive circuit is configured for receiving external signals and for providing modified signals for the matrix of picture elements during normal operation and during test mode, the arrangement of test contact areas are larger than the arrangement of operational contact areas, and the arrangement of test contact areas is configured for providing signals for generating a test pattern during test mode, as recited in amended claims 42, and claims dependent thereon.

Thus, claims 42-45 are in condition for allowance.

Jenkins also does not teach or suggest a method for manufacturing a drive electronics of an optoelectronic device having a matrix of picture elements comprising a) providing a drive circuit configured for receiving external signals and for providing modified signals for the matrix of picture elements during normal operation and during test mode, b) connecting control lines of the matrix of picture elements with output terminals of the drive circuit, c) providing a first arrangement of contact areas, wherein the first arrangement of contact areas provides signals to the drive circuit during operation mode, d) connecting the first arrangement of contact areas with input terminals of the drive circuit, e) providing a second arrangement of contact areas, said second arrangement of contact areas being larger than the contact areas of said first arrangement of contact areas, wherein said second arrangement of contact areas serve for pattern generation during test mode, and f)

connecting the second arrangement of contact areas with input terminals of the drive circuit directly or via another component, as recited in amended claim 56.

Thus, claim 56 is in condition for allowance.

Withdrawal of this rejection is respectfully requested.

Claims 30-31, 37, 39-41, 49-52 and 57-58 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Jenkins* in view of *Kim et al* (U.S. Patent No. 6,636,288, hereafter *Pat'288*). Applicant respectfully traverses the rejection.

Jenkins is discussed above. *Jenkins* does not teach or suggest the claimed subject matter. Particularly, *Jenkins* does not teach or suggest a drive electronics comprising a drive circuit configured for receiving external signals and for providing modified signals for a matrix of picture elements during normal operation and during test mode, a first arrangement of contact areas for picture generation during normal operation, and a second arrangement of contact areas for testing.

Pat'288 discloses a design of liquid crystal display. However, *Pat'288* does not teach or suggest a drive electronics as set forth in the pending claims as amended.

The Examiner agrees that *Jenkins* fails to teach or suggest that a first arrangement of contact areas serves for picture generation during normal operation. However, the Examiner argues that it is obvious to use the first arrangement of contact areas during normal operation in view of column 1, lines 35-38 of *Pat'288*. The cited passage, in fact, teaches that gate and data pads are directly connected to external driving circuits. The Examiner relies on hindsight from reading the present invention to conclude that the disclosing "wherein the first arrangement of contact areas serve for picture generation during normal operation" is obvious from the combination of *Jenkins* and *Pat'288*. Therefore, neither *Jenkins* nor *Pat'288* teaches a drive electronics having contact areas connected to an input terminal of a drive circuit. Thus, the combination of *Jenkins* and *Pat'288* does not teach or suggest subject matter set forth in claim 30.

Accordingly, *Jenkins* and *Pat'288*, alone or in combination, do not teach or suggest a drive electronics for driving an optoelectronic device with a matrix of picture elements comprising a drive circuit, wherein the drive circuit comprises input terminals and output

terminals, wherein the drive circuit is configured for receiving external signals and for providing modified signals for the matrix of picture elements during normal operation and during test mode, a first arrangement of contact areas connected with the input terminals of the drive circuit, wherein the first arrangement of contact areas serves for picture generation during normal operation, and a second arrangement of contact areas connected with the input terminals of the drive circuit directly or via another component, wherein the contact areas of the second arrangement of contact areas are larger than the contact areas of the first arrangement of contact areas, and the second arrangement of contact areas serves for pattern generation during test mode, as recited in amended claim 30, and claims dependent thereon.

Thus, claims 30-31, 37, 39-41, 49, and 57-58 are in condition for allowance.

Regarding claim 50, *Jenkins* and *Pat'288*, alone or in combination, do not teach or suggest a method for testing an optoelectronic device comprising a) making contact between an external control and an arrangement of test contact areas which are larger than operational contact areas, b) providing an input terminal of a drive circuit directly or via another component with input signals via the arrangement of test contact areas to generate a test pattern on a matrix of picture elements, wherein the drive circuit is provided with signals for picture generation during operation via the operational contact areas connected to the input terminal of the drive circuit, the drive circuit is configured for receiving external signals and for providing modified signals for the matrix of picture elements during normal operation and during test mode, and c) testing the picture elements of the matrix of picture elements, as recited in amended claim 50, and claims dependent thereon.

Thus, claims 50-52, 55, and 57 are in condition for allowance.

Claim 53 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Jenkins* and *Pat'288* as applied to claim 50 above, and further in view of *Henley* (U.S. Patent No. 5,432,461, hereafter *Henley*). Applicant respectfully traverses the rejection.

Henley teaches a test apparatus having a light source and an electro-optical element to detect light radiated by the light source (Figure 1, column 3 line 55). However, *Henley*, alone or in combination with *Jenkins*, does not teach or suggest a testing method set forth in claim 50 on which claim 53 depends.

Accordingly, the combination of *Jenkins* and *Henley*, does not teach or suggest a method for testing an optoelectronic device comprising a) making contact between an external control and an arrangement of test contact areas which are larger than operational contact areas, b) providing an input terminal of a drive circuit directly or via another component with input signals via the arrangement of test contact areas to generate a test pattern on a matrix of picture elements, wherein the drive circuit is provided with signals for picture generation during operation via the operational contact areas connected to the input terminal of the drive circuit, the drive circuit is configured for receiving external signals and for providing modified signals for the matrix of picture elements during normal operation and during test mode, and c) testing the picture elements of the matrix of picture elements, as recited in amended claim 50, and claims dependent thereon.

Thus, claim 53 is in condition for allowance. Withdrawal of this rejection is respectfully requested.

Claim 54 is rejected under 35 U.S.C. § 103(a) as being unpatentable over *Jenkins* and *Pat'288* as applied to claim 50 above, and further in view of *Kim* (U.S. Patent No. 6,486,927, hereafter *Pat'927*). Applicant respectfully traverses the rejection.

Pat'927 teaches an LCD testing system (Abstract). However, *Pat'927*, alone or in combination with *Jenkins*, does not teach or suggest a testing method set forth in claim 50 on which claim 54 depends.

Accordingly, the combination of *Jenkins* and *Pat'927*, does not teach or suggest a method for testing an optoelectronic device comprising a) making contact between an external control and an arrangement of test contact areas which are larger than operational contact areas, b) providing an input terminal of a drive circuit directly or via another component with input signals via the arrangement of test contact areas to generate a test pattern on a matrix of picture elements, wherein the drive circuit is provided with signals for

picture generation during operation via the operational contact areas connected to the input terminal of the drive circuit, the drive circuit is configured for receiving external signals and for providing modified signals for the matrix of picture elements during normal operation and during test mode, and c) testing the picture elements of the matrix of picture elements, as recited in amended claim 50, and claims dependent thereon.

Thus, claim 54 is in condition for allowance. Withdrawal of this rejection is respectfully requested.

Withdrawn Claims

The withdrawn claims 33-36, 38, 46 and 47 are dependent on independent claims 30 and 42 respectively. Thus, claims 33-36, 38, 46 and 47 are also allowable due to dependency on allowable base claims.

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed.

Having addressed all issues set out in the Final Office Action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

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Respectfully submitted,

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